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AUTHOR Glasnapp, Douglas R.
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ABSTRACT

The Metropolitan Readiness tests, first published in 1948 (forms R and S), were revised in 1966 (forms A and B). This study was instigated as a result of the charge that the revisions of the tests made them more difficult and more unfair to deprived children. Thirty-six Caucasian beginning first graders (divided evenly by high and low socioeconomic status) were given three forms (S, A, and B) of the Metropolitan Readiness Test. The following spring, the children took Primary I Battery of the same test. The scores were converted to percentile ranks and analyzed. High SES children scored significantly higher than low SES children. The revised forms were equal in difficulty and harder than the old form. A significant practice effect was manifest with mean percentile rankings progressively increasing with each subsequent administration of the tests. There was no reliable support that the new forms discriminated against disadvantaged children more than did the old form. There was higher variability for the higher SES children, but the difference was significant only for the new forms. The new forms are predictive of maturity and limitations of ability for high SES children, but are questionable when applied to low SES children. Forms A and B are reliable over the total range of population, but not for a restricted subgroup population. (MH)

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A COMPARATIVE STUDY OF THREE FORMS OF THE METROPOLITAN READINESS TEST AT TWO SOCIO-ECONOMIC LEVELS

Douglas R. Glasnapp

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Institute on School Learning and Individual Differences
John F. Kennedy Center for Research on Education and Human Development
George Peabody College for Teachers Nashville, Tennessee 37203

A COMPARATIVE STUDY OF THREE FORMS OF THE METROPOLITAN READINESS TEST AT TWO SOCIO-ECONOMIC LEVELS

by

Douglas R. Glasnapp

Bachelor of Science

Morningside College

A Thesis Submitted in Partial Fulfillment of the

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in the

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of the

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Approved:

Major Professor: Raymond C. Tu

Department Chairman: _____

Dean of the Graduate School: C B Hunt

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Introduction

The Metropolitan Readiness Tests (Forms R and S), first published in 1948, were replaced in 1965 by revised Forms A and B. According to the Manual of Directions for Form A, the revision included a modernization of items, new normative data, and addition of an alphabet subtest which supposedly increases prediction for first grade readiness (Hildreth, Griffiths, & McGauvran, 1965). The test publishers, in sampling teacher complaints and comments on the revised forms, found that the main complaint is the increased difficulty in subtest items and in the tests as a whole (Mitchell, 1967). Illustrative of these comments is the statement that "Many of the words in subtest 1, Word Meaning, are beyond the experience of kindergarten pupils, particularly those from culturally deprived backgrounds." The Director at Mount Zeno Kindergarten and Supervisors at Carter Lawrence Non-Graded Elementary (K-3), sponsored by the Nashville Education Improvement Project, also have voiced their opinion that the revised forms are too difficult for culturally deprived children. They feel also that one form may be more difficult than the other for low socio-economic status (SES) children. The test publishers have stated that the revised forms are more difficult, but are necessarily so in order to differentiate between the wide range of pupil readiness (Mitchell, 1967). If this is true, then there should be increased differentiation among high ability children on the new forms, but low ability children should tend to cluster toward the bottom and be less differentiated. One of the authors of the earlier forms of the Metropolitan Readiness Tests has stated in referring to readiness tests in general that children

with rich experiential backgrounds are able to work successfully with the tests earlier than those with limited backgrounds (Hildreth, 1950, p. 74). This statement supports the notion that high SES children should perform comparatively better than low SES children on the revised forms of the Metropolitan Readiness Tests. Based on this evidence, the revised forms should be more accurate in differentiating between high SES children, but not between low SES children.

In addition to the problem of test difficulty for low SES children, the population used in sampling for the normative data of Forms A and B "may be slightly superior to the national average with respect to median income and average schooling of adults in the sampled communities (Hildreth, Griffiths, & McGauvran, 1965, p. 15)." Data on the socio-economic characteristics of the community for each school participating in the standardization of the revised Form A were analyzed and compared with socio-economic data for the country as a whole. On the basis of this comparison, certain schools were eliminated, as were a few others where there was reason to believe that the sample tested was atypical (Hildreth, Griffiths, & McGaurvan, 1965, p. 15). Indications are, then, that the normative data listed in the test manuals (Forms A and B) do not cover the full range of scores and that percentile rankings based on these normative data do not represent the true rankings of low SES children.

The norms established for Form A are used as the norms for Form B also. The publishers justify this by presenting Forms A and B as parallel tests. As such, they might be expected to have equal means, equal

variances, equal correlations with other variables, and a high degree of intercorrelation (Ghiselli, 1964, pp. 222-228). The comparability of the parallel forms must be established not only in terms of these summary statistics, but over the entire range of scores in the population (American Psychological Association, 1966, p. 29). As noted earlier the normative data for Form A did not cover the full range of scores in the population. The same limited norms were established for Form B by means of a program equating results on this form with those on Form A for approximately 700 end-of-kindergarten pupils (Note: Norms for Form A were based on scores of beginning first grade children). In equating Forms A and B half the pupils were given Form A first and half were given Form B first. The means and standard deviations are given in Table 1.

Table 1

Alternate Form Retest Data for Forms A and B

	Form A Followed by Form B					Form B Followed by Form A				
		Mean		SD			Mean		SD	
	r_{AB}	A_1	B_2	A_1	B_2	r_{BA}	B_1	A_2	B_1	A_2
	.91	58.0	59.5	15.7	16.3	.91	57.0	60.4	16.8	16.6
Standard Error of Measurement		Form A 4.7					Form B 5.0			

The intercorrelations for the six subtests ranged from .50 to .86

The authors of the Metropolitan Readiness Tests concluded that the results

show that the two forms are equivalent in terms of total score, but for three of the subtests a one point difference exists along a portion of the score scale (Hildreth, Griffiths, & McGauvran, 1966, p. 15). The characteristics of the population used for equating Forms A and B are not given in the test manual. To show the equality of the two forms for the total range of the population, comparable data on the two forms are needed for children at different SES levels.

Although the publishers indicate clearly that Forms A and B are not to be considered equivalents of the older Forms R and S (Mitchell, 1967), it is likely that many users will continue to regard them as such. The use of the same name for the new and old revisions practically assures confusion on this point for most teachers. Many schools have asked for a table of equivalents for Form R and S versus Form A, but the publishers do not feel that this is necessary. Instead, they stress the view "new tests-new norms" (Mitchell, 1967). In spite of the publishers' feelings, the Metropolitan Readiness Tests would appear to be governed by the "essential" standards of the joint committee of the American Psychological Association, the American Educational Research Association, and the National Council on Measurement in Education which states,

> If scales are revised, new forms added, or other changes made, the revised test manual should provide tables of equivalence between the new and old forms. This provision is particularly important in cases where data are recorded on cumulative records (American Psychological Association, 1966, p. 34).

Such tables of equivalence are not yet available in the test manual, nor is there any other empirical evidence given of the relationship between the new and old forms of the test.

The purpose of this study was to provide evidence on the equivalence of the means and variances for the two new test forms (A and B) within subpopulations of children from low and high SES backgrounds, to estimate alternate forms reliability in terms of the coefficient of equivalence (Cronbach, 1960, p. 137), and to obtain similar information on the relationship between the scores on the old Form S and the two new forms.

The design employed in the study made possible tests of the hypotheses that:

1. There is no difference in mean percentile rank as a function of test form.

2. There is no difference in mean percentile rank as a function of SES level.

3. There is no order or practice effect on mean percentile rank.

4. There is no differential form effect as a function of SES level.

5. There is no differential practice effect as a function of SES level.

Tests of homogeneity of variance of score distributions across SES levels and test forms were conducted. Differences between corresponding intercorrelations of test forms at the two SES levels also were tested for significance.

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Method

Subjects

The subjects (Ss) in this study were 36 Caucasian children in Murfreesboro, Tennessee, who are scheduled to attend first grade in the

fall. The age range was restricted to include only children who were from 5-8 to 6-7 years of age and are eligible to attend first grade for the first time this fall. Three groups containing low SES children and three containing high SES children were used. Each group consisted of six Ss. Two of the low SES groups (G_1 and G_2) were selected from the children attending the summer Headstart program at Hobgood Elementary School. The other low SES group (G_3) was randomly selected from the roster of children who attended a pre-first-grade roundup at Crichlow Elementary School. Two of the high SES groups (G_4 and G_5) were obtained from children in attendance or who had attended kindergarten sessions at the Middle Tennessee State University Demonstration School. The last group was randomly selected from the roster of children who attended a pre-first-grade roundup at Reeves-Rogers Elementary School.

Each child was classified as to SES level according to the Warner, Meeker, Eells's Revised Scale for Rating Occupations (Miller, 1964). A child was classified as low SES if his father's occupation was given a rating of 5, 6, or 7 and high SES if it was given a rating of 1 or 2. All the children in the low SES groups and in the high SES groups met this condition.

Procedure

Each group was given three forms (S, A, and B) of the Metropolitan Readiness Test according to the instructions in the test manuals. Figure 1 shows the order in which the groups took the various forms of the test. The order was counterbalanced according to Lindquists' Type IV Mixed

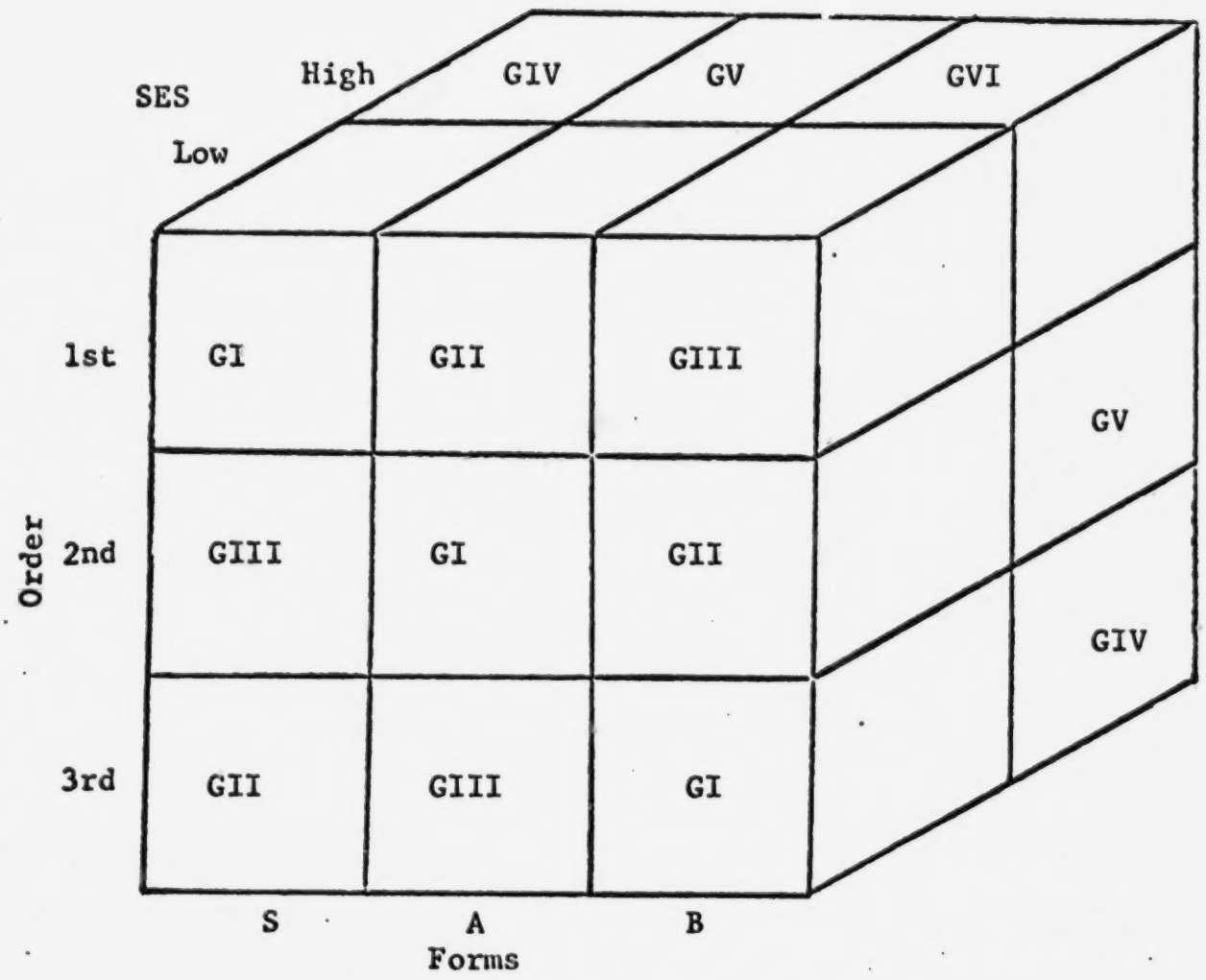

Fig. 1. Experimental design used in assessing comparability of Forms S, A, and B of the Metropolitan Readiness Test.

Design (Lindquist, 1953). This design is a repeated measures design with order counterbalanced within a given SES level and an exact replication at the second SES level.

Each group originally consisted of eight Ss, but due to absenteeism because of sickness or for other reasons, only six Ss in two of the groups and seven in another completed all three forms in the required order. Because the design used called for an equal number of Ss in each cell, Ss within each of the other four groups were randomly eliminated until each group consisted of six Ss.

All groups were given the three forms within a two-week period of time. Each group was given one form of the test per day for three consecutive days. The time the test was given to a particular group remained constant for the three-day period. Each high SES group was tested during the same three-day period; G_4 at 8:00 a.m., G_5 at 10:00 a.m., and G_6 at 1:30 p.m. Two of the low SES groups, G_1 and G_2, were tested during a different three-day period than G_3. The time of day each low SES group took the tests was comparable to the high SES groups with the various forms being given to G_1 at 8:30 a.m., to G_2 at 10:30 a.m., and to G_3 at 1:30 p.m. The forms of the test were given to each group in the order specified by the previously mentioned experimental design.

Each group was tested in an elementary classroom in their respective schools. The children were situated so as to minimize copying, but so that they could still easily hear the examiner. Due to the inability of the original examiner to continue testing all six groups, a second examiner was used to give the three forms to G_1 and G_2.

The total time for one form of the test is 60 minutes, but the publishers recommend that it be given in three sessions (Hildreth, Griffiths, & McGauvran, 1965). To break up the testing period and eliminate exhaustion and inattention of the Ss, a 15-minute recess period was given between subtests 2 and 3 and subtests 4 and 5. During these recess periods, the Ss were given play activities in a group, allowed to go to the playground, or given a juice break. The total testing period lasted about 1½ hours per group.

After the tests had been given, each S's total score was transformed to a percentile rank by use of the tables in the test manuals. Percentile rankings were used in the analyses rather than raw test scores because the percentile values are the scores used for interpretative purposes. Also, the total possible maximum score on Form S is greater than for Forms A and B. Although Forms A and B might be expected to produce comparable raw scores, there was no reason to believe Form S would do so.

Results

Socio-economic ratings, raw test scores, and percentile ranks of Ss in the six experimental groups are presented in the appendix. The mean percentile rank and standard deviation for each group on the three forms of the Metropolitan Readiness Test are given in Table 2. They are listed by SES group and according to order of administration. The mean percentile ranks also are presented graphically in Fig. 2.

Table 2

Mean Percentile Ranking for Each Group on the

Metropolitan Readiness Tests

Form		Low SES Administration			High SES Administration		
		1st	2nd	3rd	1st	2nd	3rd
S	Group	1	3	2	4	6	5
	Means	11.67	23.83	40.33	53.67	75.00	76.17
	SD	8.57	15.78	20.36	18.28	17.77	19.59
A	Group	2	1	3	5	4	6
	Means	27.33	12.00	18.17	57.33	53.00	66.33
	SD	10.78	10.51	11.05	21.59	9.14	23.25
B	Group	3	2	1	6	5	4
	Means	13.00	18.50	9.67	56.67	66.33	58.00
	SD	10.94	7.64	8.89	26.13	27.78	14.79

The summary chart for the analysis of variance is presented in Table 3. The results of the analysis of variance showed significant ($\alpha \leq .05$) support for the rejection of Hypotheses 1, 2, and 3, which were stated as null hypotheses. As expected, there was a significant difference in mean percentile rank as a function of SES level, with high SES children on the average being ranked significantly higher than low SES children. There also was a significant main effects difference in mean percentile rank

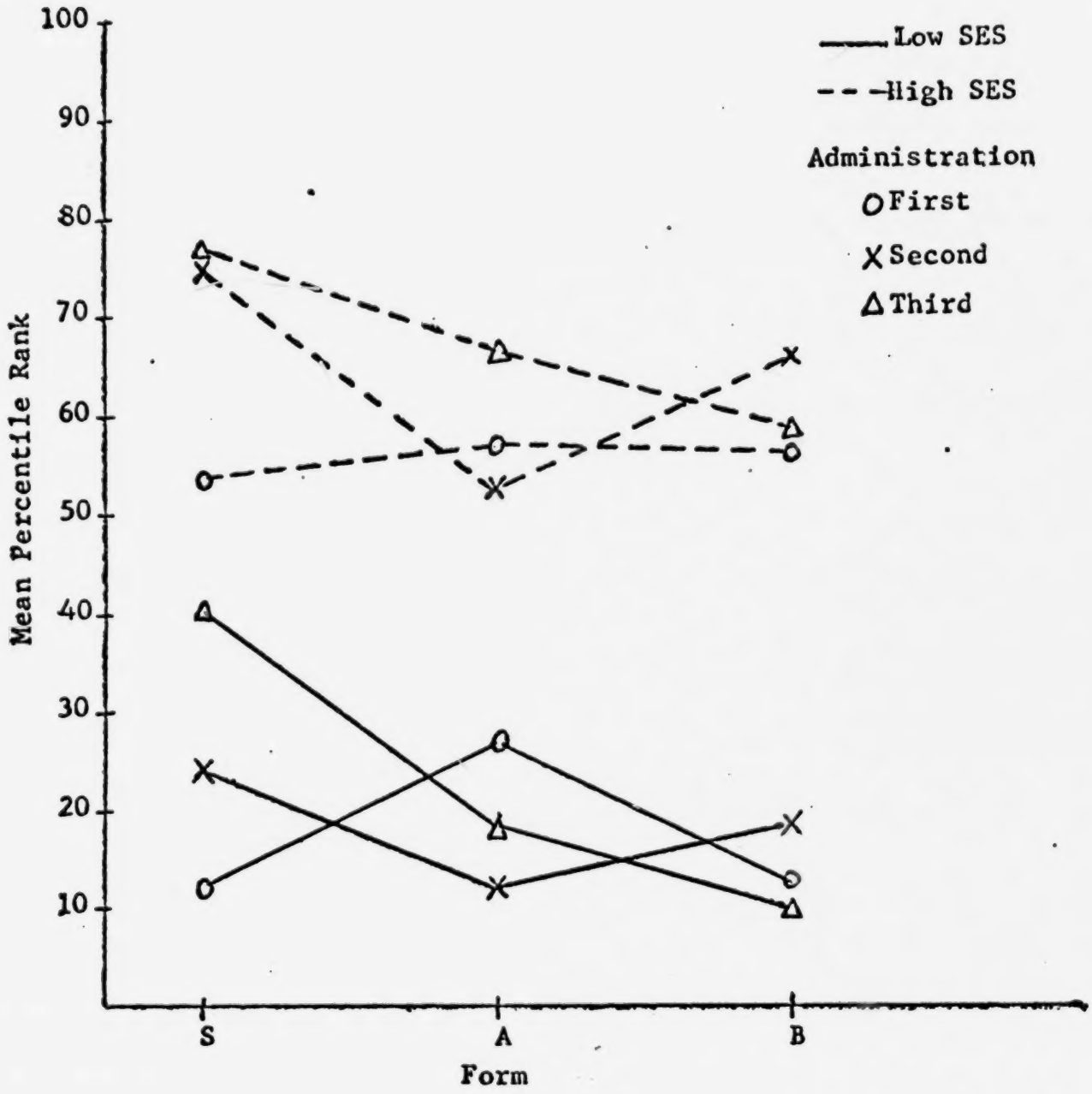

Fig. 2. Mean Percentile Rank for Each Group on the Metropolitan Readiness Tests.

Table 3

Analysis of Variance Summary Table, Type IV Design

Source of Variation	df	Σx^2	s^2	F
Between Subjects	35	75,083.00		
SES	1	50,181.33	50,181.33	73.39*
Forms X Order	2	3,952.67	1,976.34	2.89
Forms X Order X SES	2	436.22	218.11	.32
Error (b)	30	20,512.88	683.76	
Within Subjects	72	9,168.67		
Forms	2	1,909.50	954.75	11.04*
Order	2	1,214.00	607.00	7.02*
Forms X Order	2	181.50	90.75	1.05
SES X Forms	2	213.72	106.86	1.24
SES X Order	2	309.56	154.78	1.79
Forms X Order X SES	2	153.17	76.58	.89
Error (w)	60	5,187.22	86.45	
Total	107	84,251.67		

*Significant at the .05 level.

as a function of test form. This significant difference allowed for a subanalysis for differences in test forms. The subanalysis was conducted through orthogonal comparisons of Forms A and B vs. Form S and Form A vs. Form B. Table 4 shows the results of these comparisons. For combined

SES levels, the mean percentile rank for Form S is significantly greater than for Forms A and B, but there is no significant difference in mean percentile rank between Form A and Form B.

Table 4

Orthogonal Comparisons Summary Tables

Source of Variation	df	Σx^2	s^2	F
		Form Differences		
H_1: $\frac{\mu_A + \mu_B}{2} = \mu_S$	1	1837.50	1837.50	21.26*
H_2: $\mu_A = \mu_B$	1	72.00	72.00	.83
Error (w)	60	5187.22	86.45	
		Order Differences		
H_1: $\frac{\mu_1 + \mu_2}{2} = \mu_3$	1	793.50	793.50	9.18*
H_2: $\mu_1 = \mu_2$	1	420.50	420.50	4.86*
Error (w)	60	5187.22	86.45	

*Significant at the .05 level.

The other significant main effects difference was in the effect of order or practice on mean percentile rank. A subanalysis for differences in order of administration or practice effect was again conducted through orthogonal comparisons of Orders 1 and 2 vs. Order 3 and Order 1 vs. Order 2. Table 4 also shows the results of these comparisons. A significant difference in mean percentile rank was found between Orders 1 and 2

and Order 3 and also between Order 1 and Order 2. This difference is in the direction one would expect for a uniform practice effect with mean percentile rankings progressively increasing with each subsequent administration of the test.

Insufficient evidence was shown for the rejection of Hypotheses 4 and 5. None of the lower order interactions were significant according to the analysis of variance. Within the population sampled there was no statistically reliable evidence of a differential form effect as a function of SES level. Neither was there a significant differential practice effect as a function of SES level.

Comparison of the variances for each form of the Metropolitan Readiness Test between SES levels is shown in Table 5. In all three instances,

Table 5

Comparison of Variances for Each Form of the Metropolitan Readiness Test Between SES Levels

Form	Low SES s^2	High SES s^2	F
S	362.92	417.27	1.15
A	144.62	353.40	2.44*
B	89.62	511.41	5.71*

*Significant at .05 level.

the variance was greater for the high SES children than for the comparable low SES group. The variance ratio for Form S was not significant at the

.05 level, however, while the ratios for both Form A and B did exceed the critical value of 2.28. These findings were consistent with the prediction that the new form of the test would provide less differentiation for low SES children.

Homogeneity of variances was tested also through a series of F and t tests for correlated and uncorrelated variances (Walker & Lev, 1953, pp. 185 and 190-191) as appropriate in independent groups or repeated measurements. These results are shown in Tables 6 and 7. Student t tests for correlated variances were conducted for each group separately to determine if the variances for Forms S, A, and B differ significantly. As noted in Table 6, with the exception of the variances on Form S and Form B for G_2, none of the variances differed significantly.

Each cell variance for low SES children was also compared with the corresponding cell variance for high SES children using the F test for independent groups. The results given in Table 7 indicate that the only significant ($\alpha \leq .05$) difference in corresponding cell variances is between G_2 and G_5 for the variances on Form B. All other variance differences between corresponding cells were nonsignificant.

Correlations between pairs of tests (A vs. B, A vs. S, B vs. S) were run separately for high and low SES children and are reported in Table 8. The differences in corresponding coefficients were tested by a comparison between Fisher's z scores (Walker & Lev, 1953, pp. 255-256). As noted in Table 8, there was no significant difference between corresponding coefficients. It should be noted that the reliability coefficients between the two parallel forms, A and B, are much lower than

Table 6

Comparison of Correlated Variances on Forms S, A, and B Within Each Group

Group	Form	Mean	SD	Comparison Between Forms	t
	S	11.67	8.57	S and A	.49
1	A	12.00	10.51	A and B	.61
	B	9.67	8.89	S and B	.08
	A	27.33	10.78	S and A	1.84
2	B	18.50	7.64	A and B	1.03
	S	40.33	20.36	S and B	2.99*
	B	13.00	10.94	S and A	.87
3	S	23.83	15.78	A and B	.02
	A	18.17	11.05	S and B	1.34
	S	53.67	18.28	S and A	1.60
4	A	53.00	9.14	A and B	1.29
	B	58.00	14.79	S and B	.44
	A	57.33	21.59	S and A	.78
5	B	66.33	27.78	A and B	1.68
	S	76.17	19.59	S and B	2.53
	B	56.67	26.13	S and A	.70
6	S	75.00	17.77	A and B	1.07
	A	66.33	23.25	S and B	.98

*Significant at .05 level.

Table 7

Comparison of Cell Variances for Corresponding SES Groups

Form	Groups	F	Groups	F	Groups	F
S		4.54		1.08		1.27
A	1 vs. 4	1.32	2 vs. 5	4.01	3 vs. 6	4.43
B		2.77		13.23*		5.71

*Significant at .05 level.

Table 8

Comparison Between the Two SES Levels of Corresponding

Correlation Coefficients Between Test

Forms Percentile Rankings

Forms	Low SES r	Low SES N	High SES r	High SES N	z
S, A	.72	18	.67	18	.27
S, B	.71	18	.60	18	.52
A, B	.69	18	.84	18	1.04
Standard Error of Measurement for Forms A and B	Form A = 6.6 Form B = 5.2		Form A = 4.7 Form B = 3.7		

the ones stated by the test publishers in the manuals (see Table 1) and that the largest difference in coefficients between SES levels occurs in the correlation between A and B, although the difference is still non-significant.

Discussion

Data in the present study suggest that the authors of the Metropolitan Readiness Test have been successful in their efforts to make Forms A and B parallel to each other and more difficult than the earlier forms of the test. Means and variances of percentile ranks on Forms A and B were found to be comparable in groups of low and high SES children and for both SES levels combined. Th mean percentile rank for Form S was found to be significantly higher than the corresponding values for Forms A and B. There was no evidence that the difference between new and old forms of the Metropolitan Readiness Tests varied as a function of SES level.

As predicted, the increased difficulty level of the new forms of the Metropolitan tests resulted in both lower mean percentile ranks for low SES children and less variability in their percentile ranks. Experienced teachers of preschool, culturally disadvantaged children apparently have reason to question the appropriateness of the new Forms A and B for their children. The reduced differentiation among them and concentration of their scores near the bottom of the percentile scale provides less guidance than was available from scores on Forms R and S for the teacher of low SES children who would attempt to individualize her instruction.

Failure to differentiate more fully among low SES, low ability children may also make percentile scores on Forms A and B less useful than those on Forms R and S in the evaluation of special school readiness programs such as Project Headstart, the Murfreesboro (Tennessee) Early Training Project, and the preschool programs of the Nashville (Tennessee) Educational Improvement Project. The reduced variability may cause percentile scores on the new forms of the Metropolitan Readiness Test to be less predictive of early school success for low SES children than scores on the earlier forms of the test. This last point will be investigated by the author in the spring of 1968 when first grade achievement scores are available for children included in the present study.

The evidence of a practice effect showed that mean percentile ranks for the six groups combined increased progressively from the first to the third administration of the test during the three-day period (36.61, 41.44, and 44.77, respectively). These results together with the lack of evidence to substantiate a significant practice effect on mean percentile rank as a function of SES level or as a function of Form indicates that the practice effect can be considered uniform for the entire range of children sampled. The test publishers recognize that there will be a slight increase in scores due to a practice effect if alternate forms of the test are given to the same children within a one-week period, but they mention this fact in only one of their test manuals (Hildreth, Griffiths, & McGauvran, 1966, p. 14). School systems and readiness programs using the Metropolitan Readiness tests as pretests and posttests should recognize that a slight increase in scores would probably be due

to a practice effect and not to the structure of the program itself; control groups should be provided to provide estimates of the practice effect over the period of experimentation.

The large difference found in mean percentile rank between SES levels is consistent with expectations and also confirms the previously cited statement by Hildreth (1950) that high SES children should perform well on readiness tests. Because the Metropolitan Readiness Tests are used to determine the range of maturity and limitations of individual pupils, the large difference in mean percentile rank between SES levels would seem to indicate that the new forms of the test are adequate in determining these factors for high SES children, but that the appropriateness of the new forms for low SES children should be questioned. The classification of low SES children as merely being immature and not ready for normal first grade instruction does not seem to be of much help to the teacher in determining individual limitations and abilities.

The estimates of parallel forms reliability obtained within each SES level between Forms A and B were not consistent with the reliability coefficients published in the test manual. The coefficients were considerably lower, especially for the low SES group (see Tables 1 and 8). The difference in the estimates may possibly be due to difference in the variability of the groups. The low SES group was considerably more homogeneous than either of the other two groups as far as rank on the two forms which would indicate a reduction in the range of talent in comparison to the other two groups. With this reduction the magnitude of the reliability coefficient would be correspondingly reduced (Ghiselli, 1964,

p. 263). Although the size of the sample used in the present study for estimation of each coefficient is considerably smaller (N=18) than the sample used by the test publishers (N=270), it should not be considered a factor in causing the differences because the size of the sample has no effect on the size of the correlation coefficient. Because of the relatively low coefficients obtained within each SES level, correlations between the two new forms for combined SES levels were performed. The test publishers' coefficients were obtained from subjects which supposedly covered the total range of the population while the two extreme ends of the population were sampled in the present study; therefore, one would expect the alternate forms reliability coefficient for combined SES groups to be higher than the .91 reported by the test publishers. The reliability coefficient obtained was .93, thus lending support for the reliability of the new forms A and B over the total range of the population, but not for a restricted subgroup population.

In summary, the two new forms, A and B, of the Metropolitan Readiness Tests were found to yield comparable results when compared at two SES levels. As predicted, they did not differentiate as well between the low SES children as they did between high SES children and low SES children were ranked significantly lower than the high SES children on the percentile scale. A uniform practice effect also was found as was a significant difference in mean percentile rank between the old Form S and the new Forms A and B. There were no interactions between the main effects. Alternate forms reliability coefficients estimated within SES levels were considerably lower than those reported by the test publishers, but when estimated in combined SES groups, the coefficients were comparable with the one in the present study being slightly greater.

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Raw Data for Socio-economic Ratings, Test Scores, and Percentile Ranks

Group	S	Raw Scores Form S	Raw Scores Form A	Raw Scores Form B	Percentile Rank Form S	Percentile Rank Form A	Percentile Rank Form B	SES Rating	Father's Occupation
G_1	1	47	35	34	11	16	15	7	Unemployed (gravedigger)
	2	23	30	22	1	11	5	5	Shipping clerk
	3	56	44	41	20	29	25	5	Store salesman
	4	57	33	20	22	14	4	5	Electric Co. Employee (medium skilled)
	5	50	9	26	13	1	8	6	Truck driver
	6	36	6	13	3	1	1	7	Unemployed (disabled)
G_2	7	58	42	33	23	26	14	6	Semi-skilled carpet layer
	8	74	50	46	58	40	33	5	U.S.A.F.
	9	78	50	37	68	40	19	6	Hospital Aide
	10	57	35	29	22	16	11	5	Driller (medium-skilled)
	11	58	42	36	23	26	17	6	Truck driver
	12	70	35	36	48	16	17	5	Store salesman

Raw Data for Socio-economic Ratings, Test Scores, and Percentile Ranks
(continued)

Group	S	Raw Scores Form S	Raw Scores Form A	Raw Scores Form B	Percentile Rank Form S	Percentile Rank Form A	Percentile Rank Form B	SES Rating	Father's Occupation
G_3	13	31	24	20	3	7	4	6	Construction worker
	14	70	41	43	48	25	27	5	Hospital attendent
	15	60	30	24	27	11	7	5	Store clerk
	16	47	28	21	11	10	5	5	Bread salesman
	17	58	48	26	23	36	8	5	U.S.A.F.
	18	62	38	43	31	20	27	5	Hospital attendent
G_4	19	71	52	45	51	44	31	1	College Professor
	20	76	56	57	63	53	55	1	College Professor
	21	77	63	66	66	67	73	1	College Professor
	22	60	58	58	27	57	57	2	Banker
	23	81	57	63	76	55	67	2	Hardware store owner
	24	66	51	62	39	42	65	1	College Professor

Raw Data for Socio-economic Ratings, Test Scores, and Percentile Ranks
(continued)

Group	S	Raw Scores Form S	Raw Scores Form A	Raw Scores Form B	Percentile Rank Form S	Percentile Rank Form A	Percentile Rank Form B	SES Rating	Father's Occupation
	25	91	71	72	96	83	84	2	Furniture store owner
	26	82	62	68	79	65	77	1	Doctor
G_5	27	85	64	70	86	69	81	1	College Professor
	28	72	47	51	53	35	42	1	College Dean of Admission (Ph.D.)
	29	71	43	39	51	27	22	1	Engineer
	30	88	62	77	92	65	92	2	Farm owner
	31	82	66	56	79	73	53	1	Construction Company owner
	32	92	82	76	97	97	91	2	Social worker, V.A. Hospital
G_6	33	77	72	70	66	84	81	2	Insurance salesman
	34	69	47	39	45	35	22	1	College Professor
	35	84	53	48	84	46	36	1	Chiropractor
	36	82	61	58	79	63	57	1	Chiropractor